

AIR FORCE QUALIFICATION TRAINING PACKAGE (AFQTP)



**FOR
STRUCTURAL
(3E3X1)**

MODULE 39

AFSC SPECIFIC CONTINGENCY RESPONSIBILITIES

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AFSC SPECIFIC CONTINGENCY RESPONSIBILITIES

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Career Field Education and Training Plan (CFETP) references from 1 August 2002 version.

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Supersedes AFQTP 3E3X1-37, 14 Jul 00

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Notice. This AFQTP is NOT intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

AIR FORCE QUALIFICATION TRAINING PACKAGES

FOR

STRUCTURAL

(3E3X1)

INTRODUCTION

Before starting this AFQTP, refer to and read the “[AFQTP Trainer/Trainee Guide](#)”

AFQTPs are mandatory and must be completed to fulfill task knowledge requirements on core and diamond tasks for upgrade training. ***It is important for the trainer and trainee to understand*** that an AFQTP ***does not*** replace hands-on training, nor will completion of an AFQTP meet the requirement for core task certification. AFQTPs will be used in conjunction with applicable technical references and hands-on training.

AFQTPs and Certification and Testing (CerTest) must be used as minimum upgrade requirements for Diamond tasks.

MANDATORY minimum upgrade requirements:

Core task:

- AFQTP completion
- Hands-on certification

Diamond task:

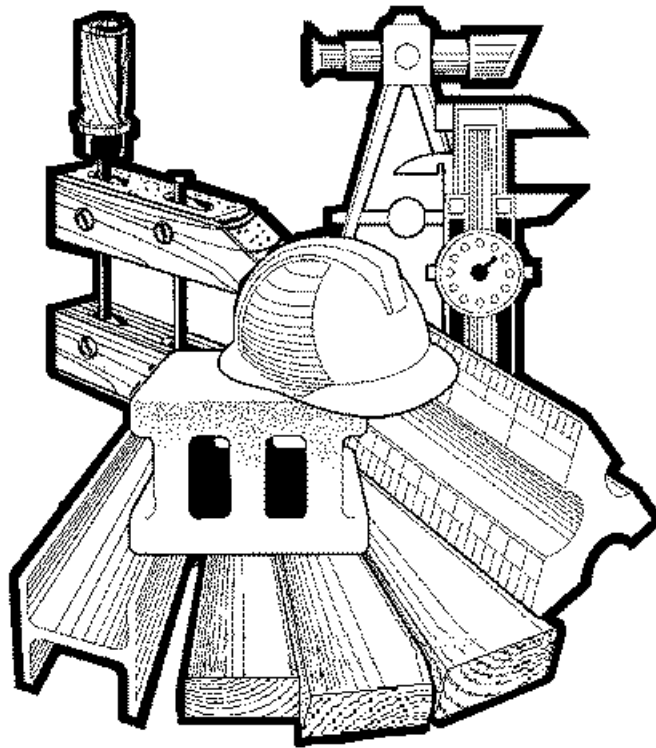
- AFQTP completion
- CerTest completion (80% minimum to pass)

Note: *Trainees will receive hands-on certification training for Diamond Tasks when equipment becomes available either at home station or at a TDY location.*

Put this package to use. Subject matter experts under the direction and guidance of HQ AFCEA/CEOF revised this AFQTP. If you have any recommendations for improving this document, please contact the Career Field Manager at the address below.

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EXPEDIENT REPAIR AND DESTRUCTION

FACILITY REPAIRS

MODULE 39

AFQTP UNIT 1

ROOF REPAIRS (39.1.1.4.1.)

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

QUICK FIX TECHNIQUES IN ROOF REPAIRS
Task Training Guide

STS Reference Number/Title:	39.1.1.4.1. – Quick fix techniques in roof repairs.
Training References:	<ol style="list-style-type: none"> 1. Career Development Course (CDC) Structural Journeyman 3E351C, Volume 4, Unit 1, Section 1-2, Lesson 603; <i>Expedient Structural Repair</i>. 2. Air Force Qualification Training Package (AFQTP) Video PIN # 613766: Saws – Circular & Reciprocating. 3. AFQTP Video PIN # 613767: Electrical Drill and Rotary Hammer.
Prerequisites:	<ol style="list-style-type: none"> 1. Possess as a minimum a 3E331 AFSC. 2. Review the CDC Structural Journeyman 3E351C, Volume 4, Unit 1, Section 1-2, Lesson 603. 3. Complete the following: <ol style="list-style-type: none"> 3.1. AFQTP Video Saws – Circular & Reciprocating. 3.2. AFQTP Video Electrical Drill and Rotary Hammer.
Equipment/Tools Required:	<ol style="list-style-type: none"> 1. Drill. 2. Apex. 3. Handsaw. 4. Circular Saw. 5. Hammer. 6. Nails. 7. Screws. 8. Plywood. 9. Plastic roof cement. 10. Plastic sheet. 11. Tarp. 12. Lumber 2 x 4s.
Learning Objective:	The trainee should know how to perform expedient repairs to roofs.
Samples of Behavior:	The trainee will be able to perform various types of expedient roof repair with no trainer assistance.
Notes:	
<ol style="list-style-type: none"> 1. Any safety violation is an automatic failure. 2. This task has been changed to a diamond task. 	

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QUICK FIX TECHNIQUES IN ROOF REPAIRS

1. Background. During a war or contingency operation, it is CE's responsibility to keep facilities as usable as possible. As a Structural Journeyman, you may be involved in not only assessing the damage, but also restoring facilities to operational condition. This is the time to make simple repairs that are not labor intensive. There will not be time. The greater the knowledgeable in expedient repairs methods, the greater the chance for mission accomplishment.

2. Additional Information. In conjunction with restoring major utilities to the base, it's important to repair structural damage to facilities so operational functions can be resumed without danger to the building occupants. The types of structural damage that may be encountered range from minor to extensive. A tornado or enemy attack may demolish numerous buildings or heavily damage sections of a facility. An earthquake, depending on its severity, could collapse a structure or only crack the plaster in a few rooms. In any of these cases, the major emphasis is on rapid restoration of vital base facilities rather than permanent repairs.

3. Job Safety. Safety is the important consideration in any type of repair, but it is especially important in expedient repairs after an emergency. The very nature of the post-disaster or post attack environment makes repair activity inherently dangerous. Live electrical wires may be down, explosive gas vapors may be present; chemical, biological, or nuclear contamination may be prevalent; unexploded ordnance may litter the base; and structures may be weakened. Repair crews and building safety are important considerations in making expedient structural repairs. Never enter a facility unless there is no immediate danger of collapse. Take a few moments to make a preliminary survey before you try to make any repairs to a building. It's every repair crewmember's responsibility to handle recovery tasks with the utmost concern for safety. Remember, a building can be replaced, you can't.

4. View the AFQTP Videos PIN # 613766, Saws – Circular & Reciprocating and PIN # 613767, Electrical Drill & Rotary Hammer. After completing the AFQTP Videos and reviewing the following information see your Unit Education and Training Manager to take the mandatory CerTest # 8404, Roof Repair. Trainee must score at least 80% to meet the minimum completion requirement for diamond tasks.

PERFORM THE FOLLOWING FOR HANDS-ON CERTIFICATION TRAINING

5. Procedures: Follow these steps to repair roofs using quick fix techniques:

NOTE TO TRAINER/CERTIFIER:

Due to the likelihood of damage requiring expedient repair not being readily available, the following is the minimum required for hands-on certification: develop a scenario for the trainee describing disaster, damaged area, and extent of damage. Have trainee complete Steps 1 – 5. Next, have trainee demonstrate procedures to accomplish Steps 6 – 9.

Step 1: Assess structural safety of building prior to entry.

Step 2: Document roof damage.

Step 3: Identify or note fallen power lines.

Step 4: Erect ladder.

4.1. Ensure the ladder is long enough to extend 36" above the edge of the building.

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4.2. The base of the ladder should be one-fourth of the height away from the building.

EXAMPLE: The height of the building from the ground to the edge of the roof is 12' so the base of the ladder needs to be 3' away from the side of the building. If the roof had a 2' overhang, then the ladder needs to be 5' away.

Step 5: Identify materials needed.

Step 6: Trim damaged edges (if needed).

Step 7: Cut and install plywood (for holes under 3' diameter).

7.1. Apply roofing cement around the hole.

7.2. Place the plywood over the hole and secure it with the screws.

Step 8: Repair large hole (over 3' in diameter).

8.1. Stretching plastic or a tarp over the hole and securing it to the roof deck would work as a temporarily measure. But if it starts to rain, the water may pond on the tarp/plastic and tear it.

8.2. Go inside the building and brace any damaged trusses or beams that may be unsupported due to the damaged roof.

8.3. Use 2 x 4s or 4 x 4 material and cut them to the proper length. Small hydraulic jacks can be used to push them back into place.

8.3.1. Take 2 x 4 x 16's and lay them on edge across the hole about 24" on center.

8.3.2. Nail a single top plate and a bottom plate on them.

8.3.3. Lay plywood across your 2 x 4s just like you would when decking the roof.

8.3.4. Apply a liberal amount of plastic roof cement around the perimeter 2 x 4s and toenail it to the roof decking.

8.3.5. Cover the plywood with felt, plastic, tarp, or anything else that would make it water-resistant.

8.4. Now the temporary repair will be water-resistant and should not collapse under pressure.

**REVIEW QUESTIONS
FOR
QUICK FIX TECHNIQUES IN ROOF REPAIRS**

QUESTION	ANSWER
1. A sheet of $\frac{3}{4}$ " plywood should cover a hole from _____.	a. 3" to 8' in diameter. b. 8' to 12' in diameter. c. 3" to 3' in diameter. d. 3' to 12' in diameter.
2. How long should expedient repairs last?	a. Until you PSC to a different base. b. Until it stops raining. c. Until more permanent repairs can be made. d. All the above.
3. What is the most important step before performing any roof repair?	a. Ensure the roof is structurally safe to walk on. b. Ensure all downed power lines have been repaired. c. The building is a priority. d. All the above.
4. The only consideration when making expedient repairs is getting the job done?	a. True. b. False.

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QUICK FIX TECHNIQUES IN ROOF REPAIRS

PERFORMANCE CHECKLIST

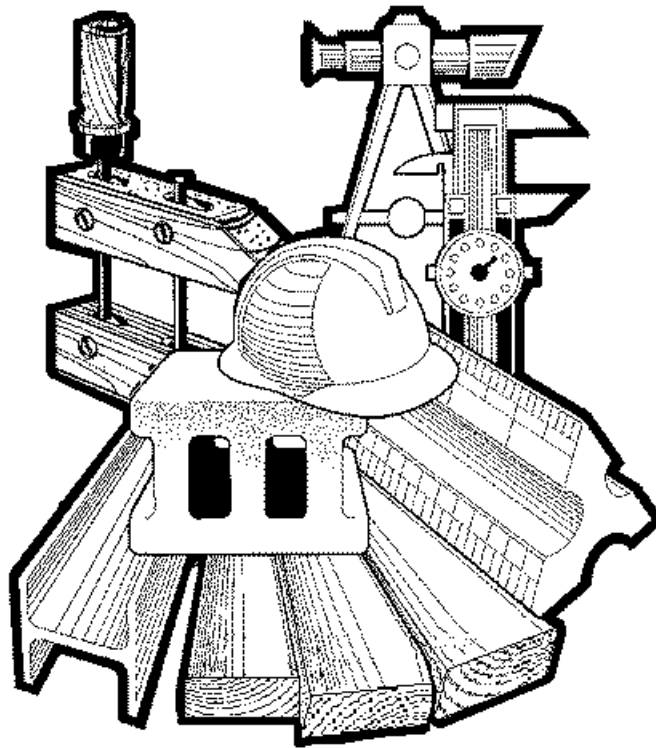
INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE....	YES	NO
1. assess the structural safety of the building before entry?		
2. safely erect the ladder (the base $\frac{1}{4}$ height of building height away from the building)?		
3. consider the possible need to brace a sagging roof?		
4. select the proper size patch for the hole (12" larger than hole)?		
5. properly secure the patch to the roof?		
6. comply with all safety requirements?		

FEEDBACK: Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer/certifier.

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EXPEDIENT REPAIR AND DESTRUCTION

FACILITY REPAIRS

MODULE 39

AFQTP UNIT 1

EXTERIOR WALLS (39.1.1.4.2.)

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QUICK FIX TECHNIQUES IN EXTERIOR WALLS REPAIRS

Task Training Guide

STS Reference Number/Title:	39.1.1.4.2. – Quick fix techniques in exterior walls repairs.
Training References:	<ol style="list-style-type: none"> 1. Career Development Course (CDC) Structural Journeyman 3E351C, Volume 4, Unit 1, Section 1-2, Lesson 603; <i>Expedient Structural Repair</i>. 2. Air Force Qualification Training Package (AFQTP) Video PIN # 613766: Saws – Circular & Reciprocating. 3. AFQTP Video PIN # 613767: Electrical Drill and Rotary Hammer.
Prerequisites:	<ol style="list-style-type: none"> 1. Possess as a minimum a 3E331 AFSC. 2. Review the CDC Structural Journeyman 3E351C, Volume 4, Unit 1, Section 1-2, Lesson 603. 3. Complete the following: <ol style="list-style-type: none"> 3.1. AFQTP Video Saws – Circular & Reciprocating. 3.2. AFQTP Video Electrical Drill and Rotary Hammer.
Equipment/Tools Required:	<ol style="list-style-type: none"> 1. Drill with Apex. 2. Circular Saw. 3. Handsaw. 4. Hammers. 5. Power Actuated Gun. 6. Sledge hammers. 7. Screws and nails. 8. Lumber. 9. Plywood.
Learning Objective:	The trainee should know how to perform expedient repairs to walls.
Samples of Behavior:	The trainee should be able to perform various types of expedient wall repairs with no trainer assistance.
Notes:	
<ol style="list-style-type: none"> 1. Any safety violation is an automatic failure. 2. This task has been changed to a diamond task. 	

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QUICK FIX TECHNIQUES IN EXTERIOR WALLS REPAIRS

1. Background. As discussed in the first unit, expedient repair is essential after an attack or disaster. A structural journeyman's repair efforts should be geared toward making a building safe for occupancy and providing minimal protection from the elements. When the air base is operating under emergency conditions, and people must make allowances for reduced comfort levels. For example, it would be poor resource management to allocate time to repair a dumpster enclosure when the Command Post roof is in need of repair. This unit will concentrate on expedient repairs to exterior walls.

2. Shoring and Buttrressing.

2.1. The first concern in structural repairs should be shoring and buttressing any weakened areas to restore a minimum degree of structural integrity to the facility. Use whatever materials are available for shoring. Mounds of earth or sandbags can be used for support, depending on the load. Beams may be salvaged from nearby damaged buildings, 2 x 4s may be nailed or tied together to form a larger supporting beam, or timbers cut from fallen trees may be used to prop up weakened areas of the structure. Do not be afraid to improvise.

2.2. The first item on the checklist should be to assess the damaged building. It might be something as simple as a small hole in the side of a wall or the entire corner could have been blown out with the ceiling sagging. In either case, the procedures are basically the same: assess the damage and effect expedient repairs.

3. View the AFQTP Videos PIN # 613766, Saws – Circular & Reciprocating and PIN # 613767, Electrical Drill & Rotary Hammer. After completing the AFQTP Videos and reviewing the following information see your Unit Education and Training Manager to take the mandatory CerTest # 8405, Wall Repair. Trainee must score at least 80% to meet the minimum completion requirement for diamond tasks.

PERFORM THE FOLLOWING FOR HANDS-ON CERTIFICATION TRAINING

4. Procedures. Follow these steps to repair exterior walls using quick fix techniques:

NOTE TO TRAINER/CERTIFIER:

Due to the likelihood of damage requiring expedient repair not being readily available, the following is the minimum required for hands-on certification: develop a scenario for the trainee describing disaster, damaged area, and extent of damage. Have trainee complete Steps 1 – 4 only (not sub bullets).

4.1. For small damage repair, (less than 3' x 6').

NOTE:

3" diameter holes can be filled with spray foam.

Step 1. Assess building for structural integrity.

Step 2. Document damage and make material lists.

Step 3. Shore/brace walls as necessary.

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Step 4. Cover hole with plywood or suitable materials.

4.1. Screw the plywood to the outside of the building if possible.

4.2. If the building is made out of masonry material such as brick, block, or pre-stressed concrete panels, use a Power actuated gun to fasten the material to the wall. Shoot the material about 6" away from the damaged section to avoid further damage to the wall that would make final repairs more difficult to accomplish.

4.3. Use silicone or some other sealant and seal the edges.

4.2. For large damage repair (over 34' x 6').

Step 1: Assess building for structural integrity.

Step 2. Document damage and make material lists.

Step 3. Shore and/or brace walls/ceilings as necessary.

Step 4. Construct 2" x 4" frame.

4.1. Construct frame at least 1' larger in all directions.

4.2. Cover frame with plywood or similar material and seal each joint

4.3. Attach frame, with plywood facing, to wall and secure with nails/screws and bracing.

4.4. Use silicone or some other sealant and seal the edges.

NOTE:

If damage is so severe and extensive, barricade the room or building until there is ample time to make repairs.

**REVIEW QUESTIONS
FOR
QUICK FIX TECHNIQUES IN EXTERIOR WALLS REPAIRS**

QUESTION	ANSWER
1. The best material to use to repair a small diameter hole in a wall would be _____.	a. silicone. b. duck tape. c. spray foam. d. All the above.
2. Trees cannot be used for shoring and bracing?	a. True. b. False.
3. If a building is damaged so severely, what should you do?	a. Estimate how much material you would need to repair it. b. Call in a RED HORSE Unit. c. Barricade the building to prevent entry. d. Nothing. Occupants may enter if they wish.

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QUICK FIX TECHNIQUES IN EXTERIOR WALLS REPAIRS

PERFORMANCE CHECKLIST

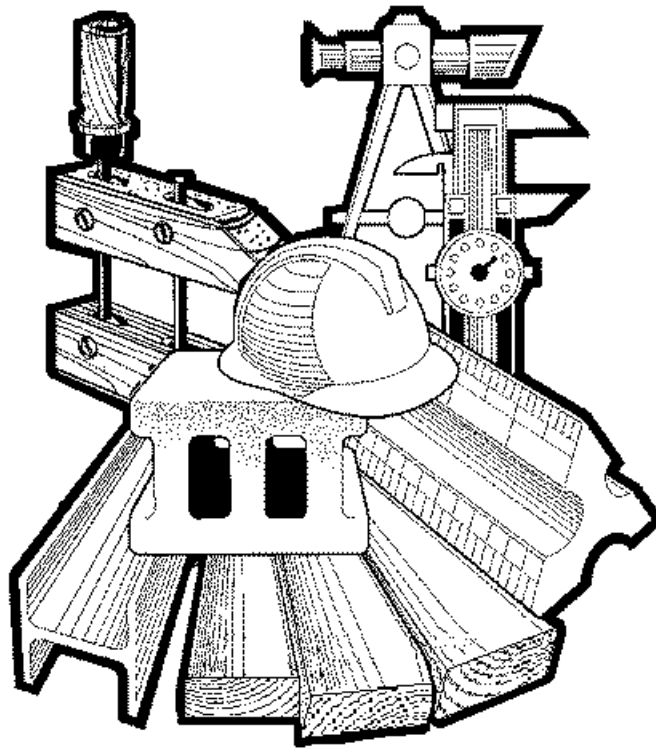
INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE....	YES	NO
1. identify possible safety hazards prior to making repairs?		
2. select the proper repair material?		
3. support a damaged wall prior to repair?		
4. comply with all safety requirements?		

FEEDBACK: Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer/certifier.

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AIRFIELD PAINT CONDUCT STRIPING PROCEDURES

MODULE 39

AFQTP UNIT 1

RUNWAYS (39.1.8.2.1.)

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CONDUCT STRIPING PROCEDURES ON RUNWAYS

Task Training Guide

STS Reference Number/Title:	39.1.8.2.1. – Conduct striping procedures on runways.
Training References:	<ol style="list-style-type: none"> 1. Career Development Course (CDC) Structural Journeyman 3E351C, Volume 4, Unit 2, Section 2-2; <i>Airfield Paint Striping</i>. 2. Technical Order (TO) 35E2-6-1, <i>Minimum Airfield Operating Surface Marking System (MAOSMS), Layout and Marking Procedures</i>. 3. TO 36C35-7-1, <i>AF120SET Paint Striping Set, Operations and Maintenance Manual</i>. 4. Air Force Handbook (AFH) 10-222, Volume 16, <i>Guide For Use Of The Minimum Airfield Operating Surface Marking System</i>. 5. CD-ROM Air Force Qualification Training Package (AFQTP) 3E3X1 Structural, Version 1.0, Feb 03: <i>Contingency Airfield Marking-Paint Striper</i>.
Prerequisites:	<ol style="list-style-type: none"> 1. Possess as a minimum a 3E331 AFSC. 2. Review the following references: <ol style="list-style-type: none"> 2.1. Review CDC 3E351C Volume 4, Unit 2, Section 2-2. 2.2. TOs 35E2-6-1 and 36C35-7-1. 2.3. AFH 10-222, Volume 16, Checklist 6, page 57. 3. Complete CD-ROM AFQTP Structural, Version 1.0, Mar 03: <i>Contingency Airfield Marking-Paint Striper</i>.
Equipment/Tools Required:	<ol style="list-style-type: none"> 1. TOs 35E2-6-1 and 36C35-7-1. 2. AFH 10-222, Volume 16. 3. Airfield runway. 4. AF120SET Paint Striping Set. 5. Chalk board. 6. Scaled down map of airfield.
Learning Objective:	The trainee should know how to do expedient airfield marking using paint.
Samples of Behavior:	The trainee should be able to paint the new lines on the MAOS.
Notes:	Any safety violation is an automatic failure.

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CONDUCT STRIPING PROCEDURES ON RUNWAYS

1. Background. Immediately following an enemy air attack, priority consideration is given to expedient reconstruction of the airfield to provide both a defensive and retaliatory capability. This is the most important CE function in a contingency environment.

2. Additional Information. The minimum operating strip (MOS) marking crew consists of at least one engineering journeyman, a structural journeyman, and four assistants of any specialty. The engineering journeyman leads three assistants in laying out the MOS and access taxiways and then placing the remaining elements of the minimum airfield operating surface marking system (MAOSMS). The structural journeymen and one assistant use the paint striping set to mark the MOS and taxiways and blackout confusing/unnecessary lines on the MOS and taxiways. It is possible that the entire MOS and access taxiway layout cannot be done at the same time because of delays required while EOD personnel clear the area. The crew must coordinate with the Airfield Damage Repair (ADR) (formerly known as Rapid Runway Repair (RRR)) Support team chief, to determine layout requirements and priorities. This information is normally decided in the Survival Recovery Center (SRC) and provided to the RRR command element by the Damage Control Center (DCC). The layout precedes pavement repairs. Marking can begin during pavement repairs but most likely won't finish until after pavement repairs are completed.

3. MAOS Paint Striping Set. The MAOS Paint Striping Set (figure 1-1), officially designated as the AF120SET, is a palletized, trailer-mounted mobile airless spray system with a trailing two-wheeled paint-gun carriage. The overall unit and trailer weighs 3,550 pounds empty and approximately 5,450 pounds when loaded with paint and beads. The trailer is 5-foot by 12-foot wide and has tandem axles and weighs 1,400 pounds. The unit and trailer can be towed by a pickup with pintal hook located between 18- to 24-inches high. If the trailer is to be loaded with two drums of paint and solvent, the truck must have a towing capacity of at least 8,000 pounds. The main assembly may be demounted from the trailer and loaded into the bed of a pickup with heavy-duty suspension and a 2-ton load capacity.

NOTE:

When loaded into the bed of a pickup truck with a lower load capacity, the AF120SET unit may not be able to carry a full load of beads and paint.

Figure 1-1. MAOS Paint Striping Set.



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4. Complete CD-ROM AFQTP 3E3X1 Structural, Version 1.0, Feb 03: *Contingency Airfield Marking-Paint Striper* for detailed instruction on the operation of the paint striper. After completing the CD-ROM AFQTP and reviewing the following information see your Unit Education and Training Manager (UETM) to take the following **mandatory** CerTest tests:

<u>CerTest #</u>	<u>CerTest Title</u>
8401	Contingency Airfield Marking-Paint Striper - Lesson 1
8402	Contingency Airfield Marking-Paint Striper - Lesson 2
8403	Contingency Airfield Marking-Paint Striper - Lesson 3

Trainee must score at least 80% to meet the minimum completion requirement for diamond tasks.

NOTE:

The review questions for this material are in the above-mentioned CD-ROM.

PERFORM THE FOLLOWING FOR HANDS-ON CERTIFICATION TRAINING IF EQUIPMENT IS AVAILABLE.

NOTE TO TRAINER/CERTIFIER:

Due to the availability of paint stripping machine actual hands proficiency will only be able to be accomplished at some overseas location or a deployment to a Silver Flag Training site.

5. Procedures. Follow this step to conduct striping procedures on runways:

Step 1: Locate AFH 10-222, Volume 16, and perform runway striping operation in accordance with, Checklist 6, Procedures 1, 2, and 3 on pages 57 and 58.

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CONDUCT STRIPING PROCEDURES ON RUNWAYS

PERFORMANCE CHECKLIST

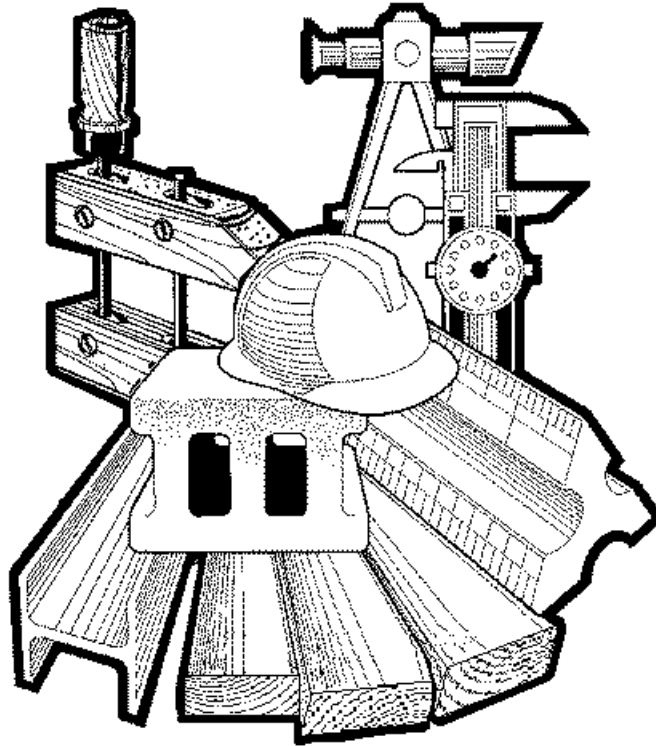
INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE....	YES	NO
1. based on the damage and repair and marking efforts, determine the order of painting ?		
2. paint the threshold correctly?		
3. paint the centerline correctly?		
4. apply glass beads correctly?		
5. black out runway marking that would cause confusion?		
6. flush and clean out the Paint Striper system correctly?		
7. comply with all safety requirements?		

FEEDBACK: Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer/certifier.

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PERFORM EXPEDIENT FIELD CONSTRUCTION

TENT HARDBACKING

MODULE 39

AFQTP UNIT 2

LAYOUT & INSTALL FLOOR (39.2.1.1.)

LAYOUT & ERECT WALLS (39.2.1.2.)

LAYOUT & INSTALL RAFTERS (39.2.1.3.)

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**LAYOUT & INSTALL FLOOR AND RAFTERS FOR HARDBACK TENT
LAYOUT & ERECT WALLS FOR HARDBACK TENT**

Task Training Guide

STS Reference Number/Title:	39.2.1.1. - Layout and install floor for hardback tent. 39.2.1.2. - Layout and erect walls for hardback tent. 39.2.1.3. – Layout and install rafters for hardback tent.
Training References:	<ol style="list-style-type: none"> 1. Career Development Course (CDC) Structural Journeyman 3E351C, Volume 4, Unit 1, Section 1-3, Lesson 606; <i>Tent Hardbacking</i>. 2. Video PIN # 52624: Hardback Construction 16' x 32' Tent. 3. Air Force Qualification Training Package (AFQTP) Video PIN # 613766: Saws – Circular & Reciprocating. 4. AFQTP Video PIN # 613768: Compound Miter Saw.
Prerequisites:	<ol style="list-style-type: none"> 1. Possess as a minimum a 3E331 AFSC. 2. Review CDC Structural Journeyman 3E351C, Volume 4, Unit 1, Section 1-3, Lesson 606. 3. Complete the following: <ol style="list-style-type: none"> 3.1. Video Hardback Construction 16' x 32' Tent. 3.2. AFQTP Video Saws – Circular & Reciprocating. 3.3. AFQTP Video Compound Miter Saw.
Equipment/Tools Required:	<ol style="list-style-type: none"> 1. 3E3X1 Consolidated Tool Kit (CTK). 2. Personal Safety Equipment. 3. Lumber. 4. Plywood. 5. Nails. 6. Screen 7. Circular Saw. 8. Compound Miter Saw.
Learning Objective:	<ol style="list-style-type: none"> 1. Trainee should be able to layout and install a floor for a hardback tent. 2. Trainee should be able to layout and erect hardback tents walls. 3. Trainee should be able to layout and install rafters on a hardback tent.
Samples of Behavior:	<ol style="list-style-type: none"> 1. Trainee will be able to demonstrate how to layout and install a floor for a hardback tent. 2. Trainee will be able to layout and erect walls for a hardback tent. 3. Trainee will be able to layout & install rafters on a hardback tent.
Notes:	
<ol style="list-style-type: none"> 1. Any safety violation is an automatic failure. 2. This task has been changed to a diamond task. 	

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

LAYOUT & INSTALL FLOOR AND RAFTERS FOR HARDBACK TENT LAYOUT & ERECT WALLS FOR HARDBACK TENT

1. Background. Tent hardbacking was first developed to provide a rigid framework for the General Purpose (GP) Medium Tent, and was commonly used when personnel are in a deployed area for an extended period of time. With the introduction of the TEMPER, Small Shelter System and Medium Shelter System tents, the need for hardbacking was reduced. However, with the increase in OPS TEMPO with numerous deployments around the world, the potential for hardbacking has increased as the Harvest packages are being depleted.

2. Tent Hardbacking. Very simply stated, hardbacking is building a frame out of 2" by 4", 2" by 6", and plywood materials and then placing a canvas tent over the structure. This provides a suitable living or supply storage area. Hardbacking can also be used for dining halls hospital wards, latrine facilities. Keep in mind any time you build a hardback for a tent you should always build the hardback 6" smaller than the size of tent, so the tent will fit without being too tight. For example the dimensions for a GP Medium tent is 16' x 32', so you would build the hardback 15' 6" x 31' 6".

3. View the AFQTP videos PIN # 613766, Saws – Circular & Reciprocating, PIN # 613768, Compound Miter Saw, and video PIN # 613768, Hardback Construction 16' x 32' Tent. After reviewing the videos and the following information see your Unit Education and Training Manager (UETM) to take the mandatory CerTest # 8400, GP Medium Hardback Tent Construction.

PERFORM THE FOLLOWING FOR HANDS-ON CERTIFICATION TRAINING IF MATERIAL IS AVAILABLE.

NOTE TO TRAINER/CERTIFIER:

Due to magnitude, cost, time, and number of personnel required to safely construct a hardback tent, it is impractical to perform this task at home station. However, should the opportunity for construction be available, all trainees may complete this AFQTP regardless of progression in upgrade training.

The minimum required for certification of this task is to identify materials needed and to explain the procedures to layout a hardback tent.

NOTE:

All material lists and drawings are at the end of this unit on page 39-27 to 39-31. Table 2-4 on page 39-30 and figure 2-4 on page 39-31 show a complete material list and where each piece will go.

4. Procedures. Follow the following steps to construction a general purpose hardback tent:

4.1. Layout and Install Floor. Tent floors consist of floor joists (16' lengths of 2" x 4"s) and sheathing (4' x 8' sheets of $\frac{3}{4}$ " plywood). The supports for the floor framing are called mudsills. Table 2-1 on page 39-27 shows the required material for the floor.

SAFETY:

MAKE SURE THAT ALL SAFETY PRECAUTIONS ARE FOLLOWED. ENSURE YOU ARE WEARING SAFETY TOE BOOTS, GLOVES EYE AND HEARING PROTECTION.

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Step 1: Layout and install mudsills.

- 1.1. There will be three mudsills that run the full length of the frame, spaced as shown in figure 1.
- 1.2. Mudsills are formed by nailing a 16'-2" x 6" (mudsill) to a 15' 6" – 2" x 4" (sleeper) and a 15' 6" – 2" x 6" (mudsill) to a 16' – 2" x 4" (mudsill) to form a T-shaped sill with the 2 x 6's forming the base.
- 1.3. The two sills are nailed together using a 2' splice block and toenails to form a mudsill 31' 6" long.
- 1.4. The mudsills are then laid out at 7' 9" on center to form the overall measurement of 15' 6". Use 16d common nails to secure the lumber together.

HINT:

Use 16d common nails to nail together mudsills and 10d nails for toenailing.

Step 2: Layout and install floor joist.

- 2.1. After the mudsills are assembled, layout the 2" x 4" floor joist (be sure to follow the plans for the proper spacing).
- 2.2. The overall lengths of the floor joist are 15' 6". The first floor joists (at each end) is nailed to the ends of the mudsills as shown in figure 1.
- 2.3. The next two floor joists (at each end) are spaced at 1'-10 1/2" on center as shown in figure 2.
- 2.4. Before you continue, it is important you square the floor at this time.
- 2.5. The remaining joists, in between, (11 each) are placed 2' centers.

HINT:

Use 16d common nails to nail together mudsills and 10d nails for plywood flooring.

Step 3: Layout and install plywood flooring.

- 3.1. After the floor joists are installed, attach the 3/4" plywood flooring. You will nail the plywood to the floor joists using 10d nails.
- 3.2. The first sheet is cut to 3' 9" x 4' and put in place.
- 3.3. The next 3 sheets are 4' x 8' and the last sheet is another 3'-9" x 4' sheet.
- 3.4. The next row will start with a sheet at 4' x 7'-9".
- 3.5. The next 2 sheets are 4' x 8' and the last sheet is another 4' x 7'-9" sheet. The reason for placing the plywood like so is to stagger the joints to increase to strength of your floor.
- 3.6. The last row of plywood will have to be cut for the overhang. To accomplish this just snap a chalk line. Ensure to maintain the width of 15'-6" the full length and cut with a circular saw.

HINT:

If possible, use treated wood for your mudsills and exterior grade plywood for your flooring.

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4.2. Layout and Erect Walls. Except for the spacing, framing hardback walls, are the same as framing any other walls. The wall-framing members are 2" x 4" studs. Table 2-2 on page 39-28 shows the required materials for the walls.

HINT:

Refer to figures 2-1 and 2-2 throughout to ensure proper dimensions and correct layout.

Step 1: Layout and construct sidewall.

1.1. Obtain the following:

1.1.1. two 2" x 4"s x 16', and two 2" x 4"s x 15' 6".

1.1.2. nine 5' 1 1/2" 2 x 4's wall studs.

1.2. Layout a 16' and a 15' 6" end to end, for your top and bottom plate, and begin laying out for the wall studs.

1.3. The first stud from each end on the sidewall is placed 3' 9", on center, from the corner. The rest of the studs are then placed 4' on center.

1.4. Once the top and bottom plates are marked, nail the wall studs in place using 16d nails.

1.5. Connect the section together using a 2' splice board and toe nailing the sill into place.

1.6. Repeat steps 1 through 6 again to build the other sidewall. Once completed, lay the sidewalls off to the side and begin construction of the end walls.

1.7. While the walls are still down nail the 2" x 6" top plates to the walls. Nail the 7' 9" 2" x 6" to both ends of the wall and nail the 16' 2" x 6" between the 7' 9" pieces.

Step 2: Layout and construct end wall.

2.1. Obtain the following: two 2" x 4"s, 6'-3/4" long and two 2 x 4's 6' 2" long for the door studs. Also needed is one 2 x 4 9 1/2" long for the nailing block, one 2 x 4 5' 11 3/4" long for the diagonal rafter, and two 2 x 4's 5'-1 1/2" long for the end wall studs.

2.2. Layout an end wall sill and an end wall header and mark the first stud at the end of the boards and the next stud at 3' 1 1/4". All layouts are positioned on center.

2.3. Once the top and bottom plates are marked, nail the wall studs in place using 16d nails.

2.4. Mark the door stud from the bottom sill, up 5' 3" (on center) and nail the door stud to the end wall sill and header as shown in figure 1.

2.5. Nail the nailing block at the top of the end wall header and to the door stud.

2.6. Next, nail the diagonal rafter to the nailing block and to the end wall header, as shown in figure 1.

2.7. Repeat steps 1 through 6 again to build the other 3 end wall sections (2 per each side).

2.8. To connect two end wall sections, nail the door header to the top of the door studs.

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Step 3: Install sidewall and end wall.

3.1. After the walls are laid out and nailed to the top and bottom plates, raise each wall into position and secure it to the floor.

3.1.1. The space for the door is 2' 6"; ensure you maintain the correct spacing.

3.1.2. Be sure to follow the prints for the exact measurements.

3.2. It is now time to level and plumb the walls.

3.2.1. Once the walls have been leveled and plumb, install 1" x 6" cross bracing on the corner of the wall.

3.2.2. Remember to leave space for the plywood skirting to fit around the walls.

3.3. You can now install the ½" plywood skirting.

3.3.1. Cut the plywood 2' wide, then install on all four sides using 8d nails.

3.3.2. If you are going to be in cold climates, consider running the skirting all the way up to the top plate.

3.3.3. Be sure all joints fall on a stud.

3.3.4. Be sure to follow all plans and double-check the measurements before cutting material.

4.3. Layout and Install Rafters. The next step is to construct the rafter members, Figure 2-1 and 2-2. Cut all the common rafters and ridge board. Layout the ridge board on the ground for the common rafters, then brace the ridge board in the proper place above the floor and walls. Attach all common rafters and check all measurements. Follow the blueprints or drawings, and cut the remaining rafter pieces to include collar ties, hip rafters, jack rafters, hips braces, and end rafters. Table 2-3 on page 39-29 shows the required material for the rafters.

Step 1: Layout and construct rafters.

1.1. The common rafters are cut to 7:12 slope from 2" x 4" stock and maintain a length of 8'-11 ¾". Obtain ten 2" x 4" x 8'-11 ¾" common rafters, one 2" x 4" x 16' ridge board, and five 2" x 4" x 2' collar ties.

1.2. Nail the common rafters to each end of the ridge board inside the hardback frame. Place the seat of the rafters inside the sidewall sill. This will ensure the rafters will fit the building and install the collar ties.

1.3. Lift the framework into position and secure it to the top plates. The seat of the rafters nails to the edge of the 16' 2" x 6" top plate.

1.4. Now plumb the rafters and nail a temporary brace to hold it into place.

Step 2: Install the rest of the common rafters and collar ties.

2.1. The hip rafters are cut to 7:17 slope from 2" x 4" stock and maintain a length of 11'-9 ½".

2.1.1. Hip rafters have a 30° compound miter cut at the top of the rafter of.

2.1.2. Remember there is a left-hand miter and right hand miter cut based upon the hip rafter you are cutting and which side of the ridge board it will be nailed to.

2.2. Install the hip rafter with the compound miter at the end of the ridge board running to the corners.

2.3. Nail the hip brace (2" x 4" x 2' 9") between the ridge rafters at both ends of the building.

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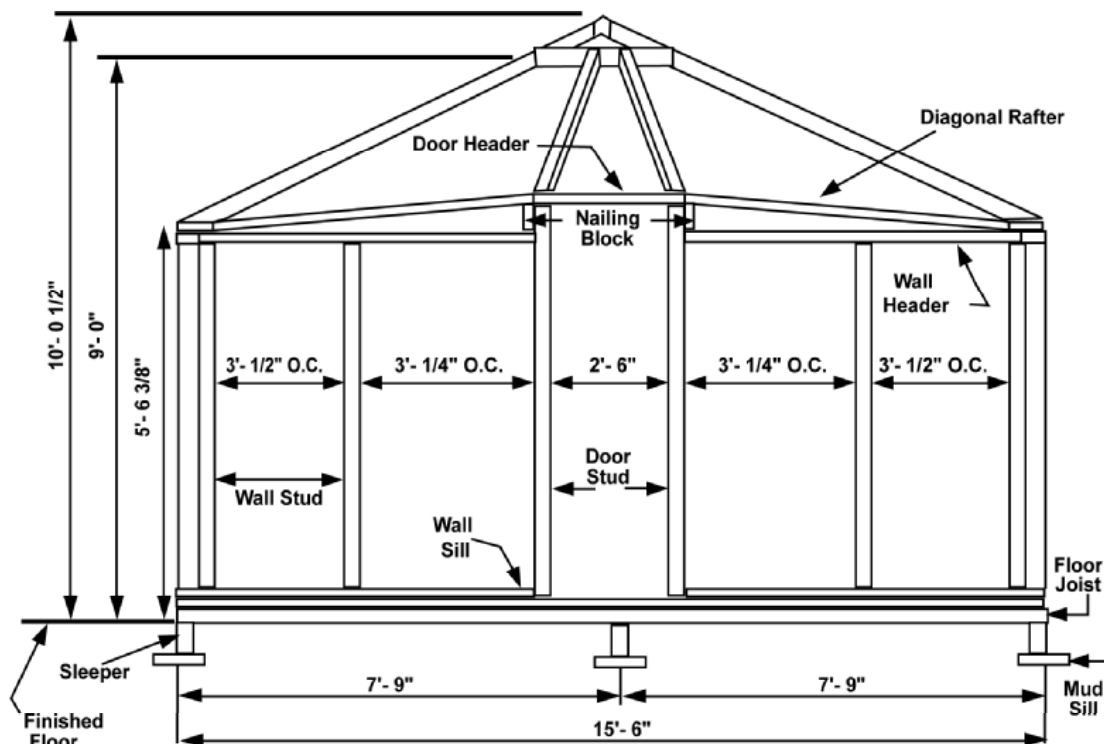
2.4. End rafters are cut to a 4:12 slope from a 2" x 4" stock and maintain a length of 6' 11 3/4". End rafters are nailed to the endwall headers, in line with the door studs.

2.5. There are 4 (ea) 4' 4" jack rafters (cut on a 7:12 slope with a 42.5° compound miter cut), are nailed to the hip rafter and the top plate. Remember there is a left-hand miter and right hand miter cut depending on where it ties into the hip rafter and top plate.

Table 2-1. Material List For GP Medium Hardback Tent Floor

DESCRIPTION	NUMBER REQUIRED	REMARKS
2" x 6" x 16'-0"	3 each	Mud Sill
2" x 6" x 15'-6"	3 each	Mud Sill
2" x 4" x 16'-0"	3 each	Sleeper
2" x 4" x 15' 6"	3 each	Sleeper
2" x 4" x 2'-0"	3 each	Splice Board
2" x 4" x 15' 6"	17 each	Floor Joist
3/4" x 4'-0" x 8'-0"	8 each	Flooring
3/4" x 3'-9" x 4'-0"	4 each	Flooring
3/4" x 4'-0" x 7'-9"	4 each	Flooring

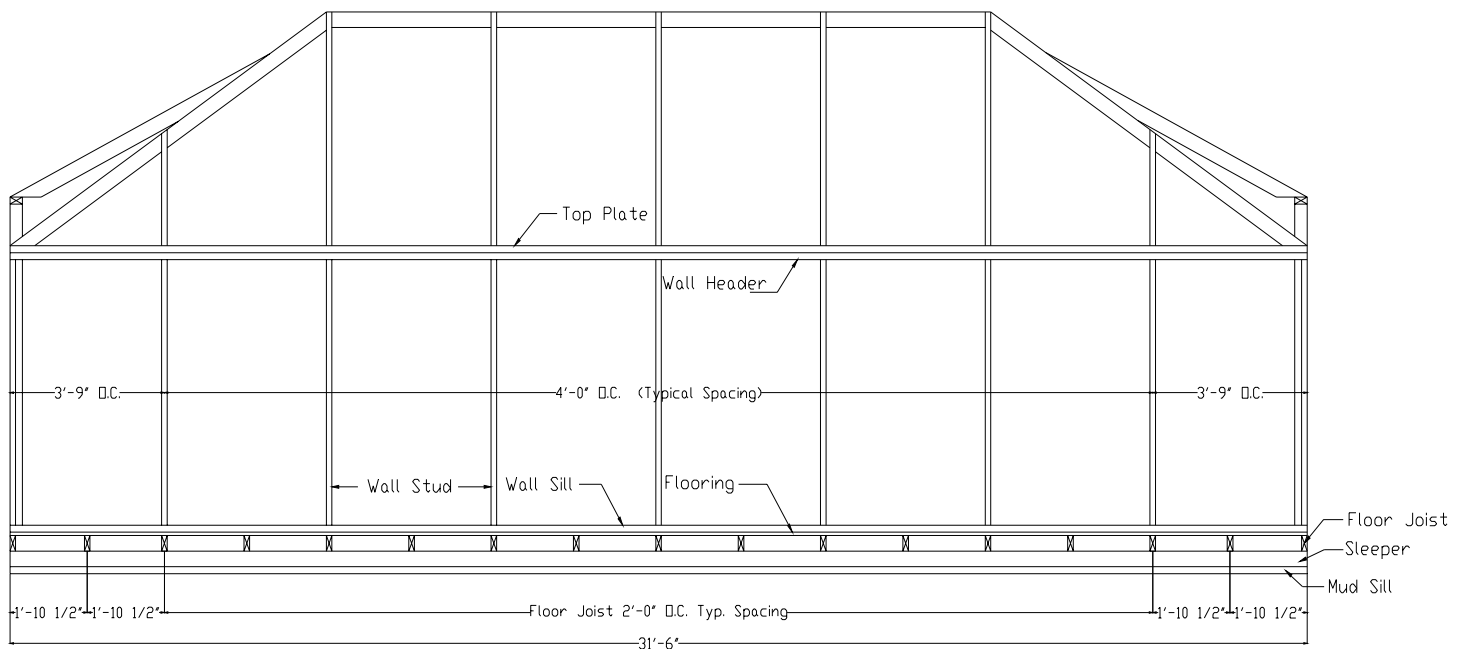
Figure 2-1. GP Medium Hardback Tent Floor and End Layout.



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Table 2-2. Material List For GP Medium Hardback Tent Walls.

DESCRIPTION	NUMBER REQUIRED	REMARKS
2" x 4" x 16'-0"	2 each	Side Wall Sill
2" x 4" x 15'-6"	2 each	Side Wall Sill
2" x 4" x 16'-0"	2 each	Side Wall Header
2" x 4" x 15'-6"	2 each	Side Wall Header
2" x 4" x 5'-1 1/2"	18 each	Side Wall Stud
2" x 6" x 16'-0"	2 each	Top Plate
2" x 6" x 7'-9"	4 each	Top Plate
2" x 4" x 6'-3/4"	4 each	End Wall Sill
2" x 4" x 6'-2"	4 each	Door Stud
2" x 4" x 9 1/2"	4 each	Nailing Block
2" x 4" x 6'-3/4"	4 each	End Wall Header
2" x 4" x 5'-1 1/2"	8 each	End Wall Stud
2" x 4" x 2'-9"	2 each	Door Header
2" x 4" x 5'-11 3/4"	4 each	Diagonal Rafter
1/2" x 2'-0" x 8'-0"	4 each	Side Wall Skirt
1/2" x 2'-0" x 7'-9"	4 each	Side Wall Skirt
1/2" x 2'-0" x 6'-5 3/4"	4 each	End Wall Skirt

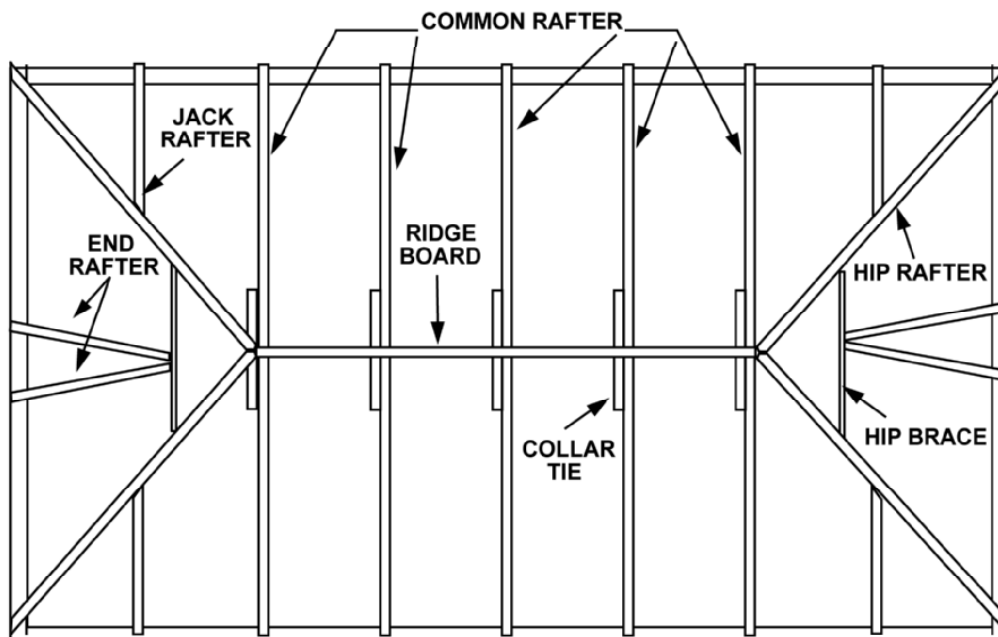
Figure 2-2. GP Medium Hardback Tent Wall Layout.

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Table 2-3. Material List For GP Medium Hardback Tent Rafter.

DESCRIPTION	NUMBER REQUIRED	REMARKS
2" x 4" x 5'-11 ³ / ₄ "	4 each	Diagonal Rafter
2" x 4" x 16'-0"	1 each	Ridge Board
2" x 4" x 8'-11 ³ / ₄ "	10 each	Common Rafter
2" x 4" x 2'-0"	5 each	Collar Tie
2" x 4" x 11'-9" ¹ / ₂ "	4 each	Hip Rafter
2" x 4" x 2'-9"	2 each	Hip Brace
2" x 4" x 6'-11 ³ / ₄ "	4 each	End Rafter
2" x 4" x 4'-4"	4 each	Jack Rafter

Rafter slopes and cuts:
Common rafter slope: 7:12
Hip rafter slope: 7:17 (30 degree compound cut)
End rafter slope: 4:12
Jack rafter slope: 7:12 (42.5 degree compound cut)

Figure 2-3. GP Medium Hardback Rafter Layout (Top View).

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Table 2-4. Complete Bill Of Material For A GP Medium Hardback Tent.

DESCRIPTION		NUMBER REQUIRED	REMARKS
A	2 x 6 x 16'-0"	3 each	Mud Sill
	2 x 6 x 15'-6"	3 each	Mud Sill
B	2 x 4 x 16'-0"	3 each	Sleeper
	2 x 4 x 15'-6"	3 each	Sleeper
C	2 x 4 x 2'-0	3 each	Splice Board
D	2 x 4 x 15'-6"	17 each	Floor Joist
E	$\frac{3}{4}$ " x 4'-0" x 8'-0"	16 each	Flooring *1
F	2 x 4 x 16'-0"	2 each	Side Wall Sill
	2 x 4 x 15'-6"	2 each	Side Wall Sill
G	2 x 4 x 5'-1 $\frac{1}{2}$ "	18 each	Side Wall Stud
H	2 x 4 x 16'-0"	2 each	Side Wall Header
	2 x 4 x 15'-6"	2 each	Side Wall Header
J	2 x 6 x 16'-0"	2 each	Top Plate
	2 x 6 x 7'-9"	4 each	Top Plate
K	2 x 4 x 6'-0 $\frac{3}{4}$ "	4 each	End Wall Sill
L	2 x 4 x 6'-2"	4 each	Door Stud
M	2 x 4 x 0'-9 $\frac{1}{2}$ "	4 each	Nailing Block
N	2 x 4 x 6'-0 $\frac{3}{4}$ "	4 each	End Wall Header
P	2 x 4 x 5'-1 $\frac{1}{2}$ "	8 each	End Wall Stud
Q	2 x 4 x 2'-9"	2 each	Door Header
R	2 x 4 x 5'-11 $\frac{3}{4}$ "	4 each	Diagonal Rafter
S	2 x 4 x 16'-0"	1 each	Ridge Board
T	2 x 4 x 8'-11 $\frac{3}{8}$ "	10 each	Common Rafter
U	2 x 4 x 2'-0"	5 each	Collar Tie
V	2 x 4 x 11'-9 $\frac{1}{2}$ "	4 each	Hip Rafter *2
W	2 x 4 x 2'-9"	2 each	Hip Brace
X	2 x 4 x 6'-11 $\frac{3}{4}$ "	4 each	End Rafter
Y	2 x 4 x 4'-4"	4 each	Jack Rafter *2
Z	$\frac{1}{2}$ " x 2'-0" x 8'-0"	4 each	Side Wall Skirt
	$\frac{1}{2}$ " x 2'-0" x 7'-9"	4 each	Side Wall Skirt
AA	$\frac{1}{2}$ " x 2'-0" x 6'-5 $\frac{3}{4}$ "	4 each	End Wall Skirt
	#16 Mesh 4'-0" wide	100 LF	Screen *3
	$\frac{1}{2}$ " x 1"	300 LF	Screen Lath *3
	Nail 2d	1.0 lb	For Screen Lath
	Nail 8d	10.0 lb	
	Nail 10d	5.0 lb	
	Nail 16d	5.0 lb	
	Tent Light Set	1 each	Harvest Eagle Type

NOTES:

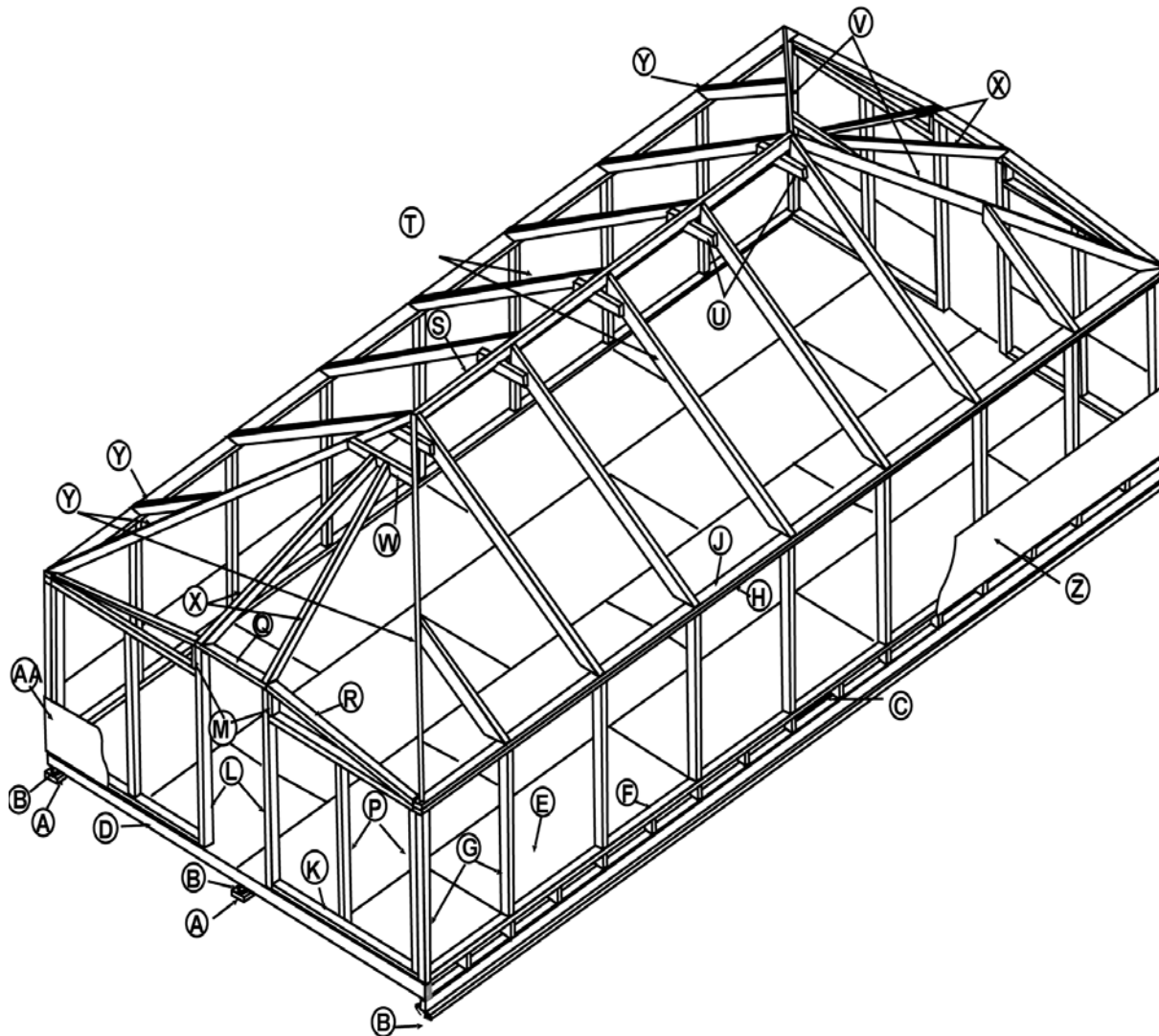
*1. Trim after installation to appropriate size.

*2. Compound Miters involved in installation.

*3. (Not shown on plans.) Staples may be used to anchor screen in place until lath can be installed.

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Figure 2-4. GP Medium Hardback Tent.

**LEGEND**

A MUD SILL	M NAILING BLOCK
B SLEEPER	P END WALL STUD
C SPLICE BOARD	Q DOOR HEADER
D FLOOR JOIST	R DIAGONAL RAFTER
E FLOORING	S RIDGE BOARD
F SIDE WALL SILL	T COMMON RAFTER
G SIDE WALL STUD	U COLLAR TIE
H SIDE WALL HEADER	V HIP RAFTER
J TOP PLATE	W HIP BRACE
K END WALL SILL	X END RAFTER
L DOOR STUD	Y JACK RAFTER

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**REVIEW QUESTIONS
FOR
LAYOUT & INSTALL FLOOR AND RAFTERS FOR HARDBACK TENT
LAYOUT & ERECT WALLS FOR HARDBACK TENT**

QUESTION	ANSWER
1. A hardback tent is commonly used on deployments over _____.	a. 60 days. b. 90 days. c. 30 days. d. extended period of time.
2. What are the overall dimensions of the hardback floor?	a. 16' x 32'. b. 15'-6" x 31'-6". c. 16'-6" x 32'-6". d. 15' x 31'.
3. What is the common spacing between floor joists?	a. 1' on center. b. 2' on center. c. 3' on center. d. 4' on center.
4. What is used for floor sheathing on a hardback tent?	a. Plywood. b. 1" x 6"s. c. Paneling. d. All the above.
5. The second floor joist is placed how far from the end?	a. 2'. b. 1'-10 1/2". c. 2'-10 1/2". d. 1'.
6. What is the common stud spacing after the first stud?	a. 16" O.C. b. 2' O.C. c. 3' O.C. d. 4' O.C.
7. What are the walls of the hardback constructed of?	a. 1" x 2"s. b. 1" x 4"s. c. 2" x 4"s. d. 2" x 6"s.
8. What is the placement of the first stud from each end of the sidewalls?	a. 16". b. 2'-9". c. 3'-9". d. 4'.
9. How wide is the door opening?	a. 2'-6". b. 3'-6". c. 2'-1 1/2". d. 3'-1 1/2".
10. How thick is the plywood skirting?	a. 1/4". b. 1/2". c. 3/4". d. 1".

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REVIEW QUESTIONS (CONTINUED)

QUESTION	ANSWER
11. What is the slope of a common rafter?	a. 7:12 slope. b. 7:17 slope. c. 4:12 slope. d. 4:17 slope.
12. What is the slope of a hip rafter?	a. 7:12 slope. b. 7:17 slope. c. 4:12 slope. d. 4:17 slope.
13. What is the slope of an end rafter?	a. 7:12 slope. b. 7:17 slope. c. 4:12 slope. d. 4:17 slope.
4. What is the slope of a jack rafter?	a. 7:12 slope. b. 7:17 slope. c. 4:12 slope. d. 4:17 slope.
15. Which rafters have compound miter cuts?	a. Jack Rafter and End Rafter. b. Jack Rafter and Hip Rafter. c. Common Rafter and Hip Rafter. d. Common Rafter and Jack Rafter.

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LAYOUT & INSTALL FLOOR AND RAFTERS AND LAYOUT & ERECT WALLS FOR HARDBACK TENT

PERFORMANCE CHECKLIST

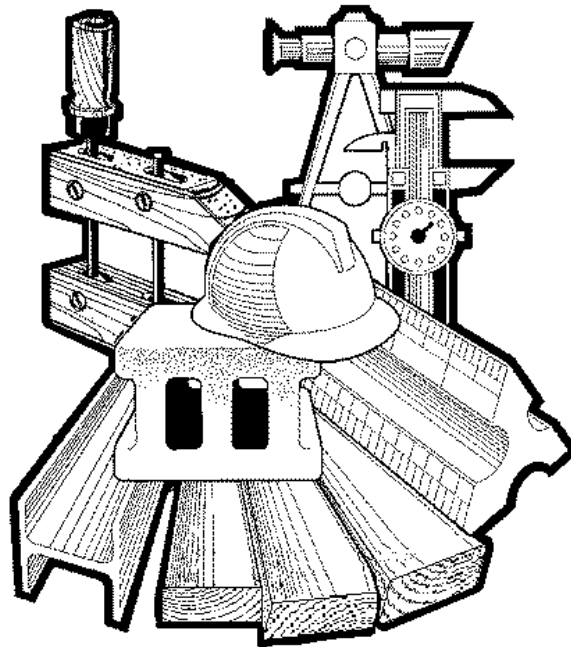
INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE....	YES	NO
Layout, Construct, & Install Floor		
1. layout floor 6" smaller than the tent itself?		
2. construct the mudsill correctly?		
3. layout the floor joists correctly? (2' on center)		
4. install (stagger) the plywood floor correctly?		
5. comply with all safety requirements?		
Layout, Construct, & Install Walls		
1. layout the sidewalls correctly?		
2. layout the end walls correctly?		
3. install the double top plate correctly?		
4. comply with all safety requirements?		
Layout, Construct, & Install Rafters		
1. cut & install the common rafters to the correct specifications?		
2. cut & install the hip rafters to the correct specifications?		
3. cut & install the end rafters to the correct specifications?		
4. cut & install the jack rafters to the correct specifications?		
5. comply with all safety requirements?		

FEEDBACK: Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer/certifier.

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PERFORM EXPEDIENT FIELD CONSTRUCTION

TENT ERECTION

MODULE 39

AFQTP UNIT 2

ASSEMBLE TEMPER TENT (39.2.2.1.1)

ERECT TEMPER TENT (39.2.2.1.2

DISASSEMBLE TEMPER TENT (39.2.2.1.5)

STORAGE OF TEMPER TENT (39.2.2.1.6)

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ASSEMBLE, ERECT, DISASSEMBLY, STORAGE TEMPER TENT***Task Training Guide***

STS Reference Number/Title:	39.2.2.1.1. - Assemble TEMPER tent. 39.2.2.1.2. - Erect TEMPER tent. 39.2.2.1.5. - Disassembly TEMPER tent. 39.2.2.1.6. - Storage TEMPER tent.
Training References:	1. <u>Technical Order (TO) 35E5-6-1, Operator, Unit, and Direct Support Maintenance Manual for Tent, Extendable, Modular, Personnel, (TEMPER).</u> 2. CD-ROM Air Force Qualification Training Package (AFQTP) 3E1X1 HVAC/R, Version 1.0, Feb 98: <i>TEMPER Tent</i> . 3. Video PIN # 612617: <i>TEMPER Tent</i> .
Prerequisites:	1. Possess as a minimum a 3E331 AFSC. 2. Review video PIN # 612617. 3. Complete CD-ROM AFQTP 3E1X1 HVAC/R, Version 1.0, Feb 98: <i>TEMPER Tent</i>.
Equipment/Tools Required:	1. TEMPER Tent Set 2. Leather gloves 3. TO 35E5-6-1.
Learning Objective:	The trainee should understand the basic concepts of assembling, erecting, disassembling, and storing the TEMPER tent.
Samples of Behavior:	The trainee, as a member of a team, will be able to assemble, erect, disassemble, and store a TEMPER tent.
Notes:	Any safety violation is an automatic failure.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

ASSEMBLE, ERECT, DISASSEMBLY, STORAGE TEMPER TENT

1. Background. As a member of a Prime BEEF team, one of your taskings is to erect shelters for deployed personnel. The tent extendible modular personnel (TEMPER) is by far the most common tent in the Harvest Falcon and Harvest Eagle packages.

2. Additional Information. The TEMPER tent is a modular soft shelter supported by an aluminum frame structure. The tent fabric is made of a synthetic material. Its primary use is for troop billeting (12 personnel per tent) but it also supports other functions such as shops and administrative space. The tent is equipped with roll up windows, mosquito netting, and a fly sheet (waterproof material that attaches above the tent top and allows free movement of air between the fly sheet and tent top). The tent comes in 8 by 20-foot sections that fasten together; and the nominal tent size is 32 by 20-feet. Also included is a white inner liner for insulation and a fabric floor. For special adaptations, solid doors and entry vestibules are available. An electrical wiring kit provides lights and convenience outlets. The TEMPER tent can be heated and cooled, as required, and a fabric plenum is provided to direct airflow. Ten people can easily erect this shelter in less than two hours. In a basic Harvest Falcon package of a 1,100-person/one aircraft squadron configuration, 92 tents are provided for billeting purposes and 56 tents are for other base functions.

3. Complete the CD-ROM AFQTP 3E1X1 HVAC/R, Version 1.0, Feb 98: *TEMPER Tent* for detailed instruction on the assembling, erecting, disassembling, and storage of a TEMPER tent. After completing the CD-ROM AFQTP see your Unit Education and Training Manager (UETM) to take the following **mandatory** CerTest tests.

<u>CerTest #</u>	<u>CerTest Title</u>
8070	TEMPER Tent QTP - Lesson 1
8071	TEMPER Tent QTP - Lesson 2
8072	TEMPER Tent QTP - Lesson 3
8073	TEMPER Tent QTP - Lesson 4

Trainee must score at least 80% to meet the minimum completion requirements for diamond tasks.

NOTE:

The review questions for this material are in the above-mentioned CD-ROM.

PERFORM THE FOLLOWING FOR HANDS-ON CERTIFICATION TRAINING IF TEMPER IS AVAILABLE.

NOTE TO TRAINER/CERTIFIER:

Due to size of a TEMPER tent, and number of personnel required to safely construct a full tent, the trainee will satisfy the performance portion of this AFQTP if he/she can direct four assistants to correctly assemble, erect, disassemble, and store: one full section; one end wall; and one section of the fly.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

4. Procedures. Follow these steps to assemble, erect, disassemble, and store a TEMPER tent:

4.1. Assemble TEMPER Tent.

Step 1: Locate TO 35E5-6-1, *Operator, Unit, and Direct Support Maintenance Manual for Tent, Extendable, Modular, Personnel, (TEMPER)* and assemble TEMPER tent in accordance (IAW) with Chapter 2, Section III, Paragraph 2-5 through 2-10.

4.2. Erect TEMPER Tent.

Step 1: Locate TO 35E5-6-1, *Operator, Unit, and Direct Support Maintenance Manual for Tent, Extendable, Modular, Personnel, (TEMPER)* and erect TEMPER IAW with Chapter 2, Section III, Paragraph 2-11 through 2-19.

4.3. Disassembly TEMPER Tent.

Step 1: Locate TO 35E5-6-1, *Operator, Unit, and Direct Support Maintenance Manual for Tent, Extendable, Modular, Personnel, (TEMPER)* and disassemble TEMPER IAW with Chapter 2, Section III, Paragraph 2-26.

4.4. Store TEMPER Tent.

Step 1: Locate TO 35E5-6-1, *Operator, Unit, and Direct Support Maintenance Manual for Tent, Extendable, Modular, Personnel, (TEMPER)* and store TEMPER IAW with Chapter 2, Section III, Paragraph 2-26(6)(e).

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

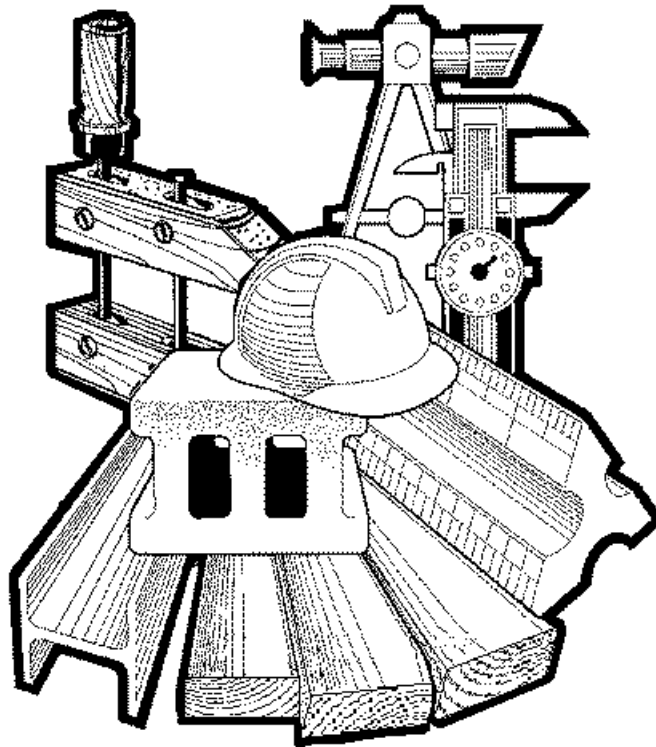
TEMPER TENT – ASSEMBLE, ERECT, DISASSEMBE, STORE**PERFORMANCE CHECKLIST****INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE....	YES	NO
Assemble TEMPER Tent		
1. describe the characteristics of a good site location?		
2. identify various parts of the set and their function?		
3. properly layout the arches?		
4. install the purlins correctly (and were gloves worn)?		
5. install the cover correctly?		
6. install the end walls correctly?		
7. install the fly correctly?		
8. determine when to install the lights, liners, and plenums?		
9. comply with all safety requirements?		
Erect TEMPER Tent		
1. raise the sidewalls correctly?		
2. explain how to properly stake down the TEMPER Tent?		
3. comply with all safety requirements?		
Disassemble/Store TEMPER Tent		
1. lower the sidewalls correctly?		
2. remove the fly and fold correctly?		
3. remove the cover correctly and fold?		
4. remove all purlins and store correctly?		
5. remove the various components of the frame and store correctly?		
6. place all components in the storage bag/diaper correctly?		
7. comply with all safety requirements?		

FEEDBACK: Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer/certifier.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.



PERFORM EXPEDIENT FIELD CONSTRUCTION

TENT ERECTION

MODULE 39

AFQTP UNIT 2

SMALL SHELTER SYSTEM (SSS) (39.2.2.2.)

NOTE TO SUPERVISOR/TRAINER:

At this time the SSS is replacing TEMPER tent in the Harvest Eagle and Falcon beddown packages. Although this AFQTP unit is optional, it is still recommended and encouraged that the trainee complete this AFQTP paper based requirements to receive a good understanding and foundation for the SSS.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

SMALL SHELTER SYSTEMS (SSS)***Task Training Guide***

STS Reference Number/Title:	39.2.2.2. – Small Shelter System (SSS).
Training References:	<ol style="list-style-type: none"> 1. <u>Technical Order (TO) 35E5-6-11, Alaska Small Shelter System, Operation and Maintenance Instructions.</u> 2. CD-ROM Air Force Qualification Training Package (AFQTP) 3E3X1 Structure, Version 1.0, Oct 00: <i>Small Shelter System</i>.
Prerequisites:	<ol style="list-style-type: none"> 1. Possess as a minimum a 3E331 AFSC. 2. Review TO 35E5-6-11. 3. Complete CD-ROM AFQTP 3E3X1 Structure, Version 1.0, Oct 00: <i>Small Shelter System</i>.
Equipment/Tools Required:	<ol style="list-style-type: none"> 1. Gloves. 2. Steel toed boots. 3. 8' ladder. 4. Eye protection 5. Small and large sledge hammer. 6. Small Shelter System.
Learning Objective:	Individual should have an understanding of how a Small Shelter System is erected, disassembled, and stored.
Samples of Behavior:	As part of a crew, the trainee will be able to erect, disassemble, and store a SSS.
Notes:	
Any safety violation will result in a failure.	

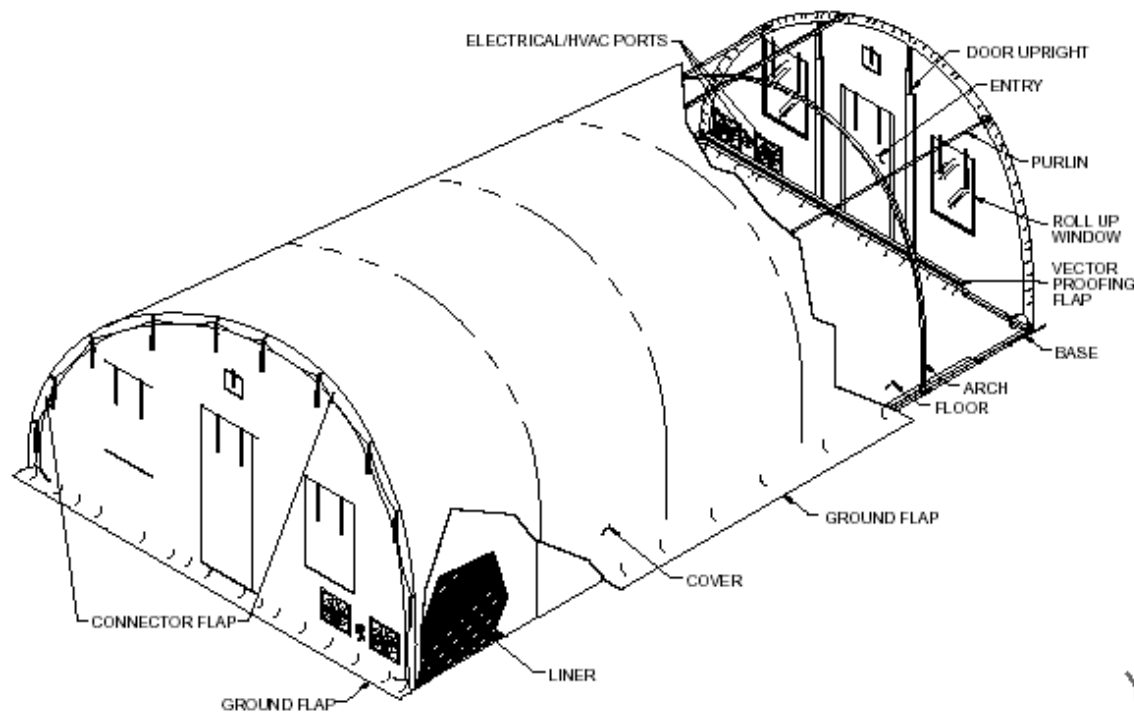
Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

SMALL SHELTER SYSTEM

1. Background. The Small Shelter System (SSS) has been introduced into the Harvest Falcon and Eagle beddown packages to replace the TEMPER tents. As with any new system, it will take time before it is fully implemented into the inventory. With today's increasing deployments, it is very possible that Structure personnel will encounter a SSS at a deployed location. For that reason, technicians should become familiar with the erection, disassembly, and storage of the SSS.

2. Manpower Requirements. Unlike the TEMPER, the SSS is not labor nor manpower intensive. Only four experienced people are needed to actually erect the SSS in about an hour. Although more are desired, it is not necessary. The TEMPER on the other hand, requires up to 12 people and 2 hours to set up. With the time and labor saving, three 4-man teams can set up six SSS in the same time it takes to set up one TEMPER.

Figure 2-5. Small Shelter System.



3. Features. There are some common features between the TEMPER and SSS. Both are easily transportable, both can be used with environmental control units, and both have electrical capabilities. A TEMPER tent's floor has to be constructed to fit inside the frame, whereas the SSS can be located directly on a concrete or asphalt pad. To accomplish this, it is recommended to have a rotary hammer drill available as the SSS comes with anchors.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

4. Complete the CD-ROM AFQTP 3E3X1 Structure, Version 1.0, Oct 00: *Small Shelter System* for detailed instruction on the erecting, disassembling, and storage of a SSS. After completing the CD-ROM AFQTP see your Unit Education and Training Manager (UETM) and take CerTest # 8134, *Small Shelter System (SSS): Structures Support*. Trainee must score at least 80% to meet the minimum completion requirements for diamond tasks.

NOTE:

The review questions for this material are in the above-mentioned CD-ROM.

PERFORM THE FOLLOWING FOR HANDS-ON CERTIFICATION TRAINING IF SHELTER IS AVAILABLE.

NOTE TO TRAINER/CERTIFIER:

Due to the availability of the SSS, actual hands-on proficiency will only be accomplished at certain overseas location or at a Silver Flag Training site. In addition to the availability, the size of a SSS, and number of personnel required to safely construct a shelter, the trainee will satisfy the performance portion of this AFQTP if he/she can direct three assistants to correctly erect, disassemble, and store a SSS.

5. Procedures. Follow these steps to erect, disassemble, and store a SSS:

5.1. Erect SSS.

Step 1: Locate TO 35E5-6-11, *Alaska Small Shelter System, Operation and Maintenance Instructions* and erect SSS in accordance with (IAW) Chapter 3, Paragraph 3-3 through 3-11.

SAFETY:

ARCHES WILL BE UNDER EXTREME SPRING PRESSURE. DO NOT PUSH ARCH LEG INTO PLACE, AS SERIOUS INJURY WILL RESULT. PULL ARCHES INTO PLACE FROM INSIDE THE TENT.

5.2. Disassembly SSS.

Step 1: Locate TO 35E5-6-11, *Alaska Small Shelter System, Operation and Maintenance Instructions* and disassemble SSS IAW with Chapter 4, Paragraph 4-2 through 4-4.

5.3. Store SSS.

Step 1: Locate TO 35E5-6-11, *Alaska Small Shelter System, Operation and Maintenance Instructions* and store SSS IAW with Chapter 4, Paragraph 4-5.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

SMALL SHELTER SYSTEM

PERFORMANCE CHECKLIST

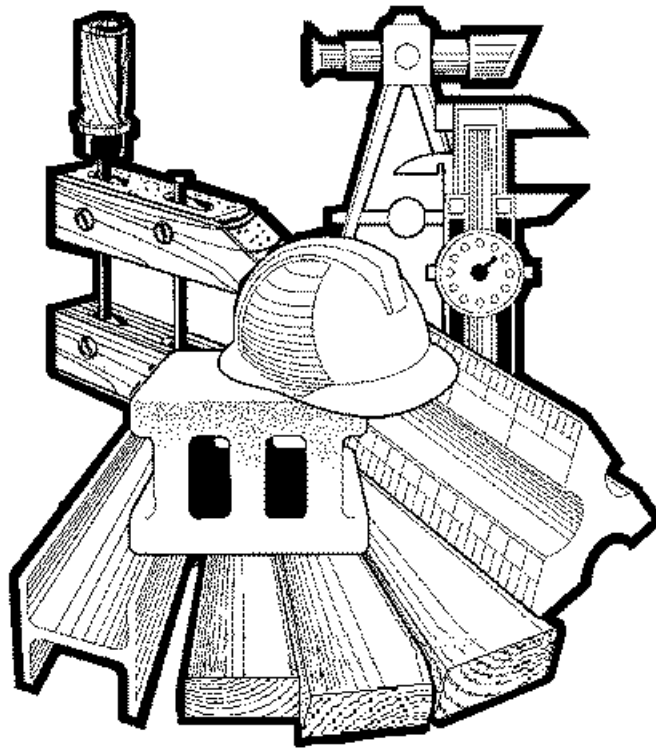
INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE ...	YES	NO
Erect Small Shelter System		
1. describe the characteristics of a good site location?		
2. identify various parts of the set and their function?		
3. correctly layout the base and square it?		
4. correctly assemble the arches?		
5. install the arches correctly?		
6. install the end wall with door correctly?		
7. install the cover correctly?		
8. install the liner correctly?		
9. stake the guy ropes correctly?		
10. comply with all safety requirements?		
Disassembly Small Shelter System		
1. remove the liner correctly?		
2. remove the cover safely		
3. remove the end wall and doors safely and correctly?		
4. remove the purlins correctly?		
5. remove the arches safely?		
6. use spike puller and dunnage to remove spikes?		
7. fold items correctly?		
8. comply with all safety requirements?		
Store Small Shelter System		
1. pack ropes and small pieces on bottom?		
2. next pack purlins, uprights and inserts correctly?		
3. next pack arches correctly?		
4. next pack base pieces correctly?		
5. place packing liner in next?		
6. place soft door panes on top of liners?		
7. place flooring next?		
8. place interior liner panels next?		
9. place hard door panel on top of interior liner?		
10. add second liner?		
11. comply with all safety requirements?		

FEEDBACK: Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer/certifier.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.



PERFORM EXPEDIENT FIELD CONSTRUCTION

TENT ERECTION

MODULE 39

AFQTP UNIT 2

MEDIUM SHELTER SYSTEM (MSS) (39.2.2.3.)

NOTE TO SUPERVISOR/TRAINER:

At this time the MSS is replacing General Purpose Shelter in the Harvest Eagle and Falcon beddown packages. Although this AFQTP unit is optional, it is still recommended and encouraged that the trainee complete this AFQTP paper based requirements to receive a good understanding and foundation for the MSS.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

MEDIUM SHELTER SYSTEMS (MSS)
Task Training Guide

STS Reference Number/Title:	39.2.2.3. – Medium Shelter System (MSS).
Training References:	<ol style="list-style-type: none">1. Technical Order (TO) 35E5-6-21, California Medium Shelter System, Operation and Maintenance Instructions.2. CD-ROM Air Force Qualification Training Package (AFQTP) 3E3X1 Structure, Version 1.0, May 01: <i>Medium Shelter System.</i>
Prerequisites:	<ol style="list-style-type: none">1. Possess as a minimum a 3E331 AFSC.2. Review TO 35E5-6-21.3. Complete CD-ROM AFQTP 3E3X1 Structure, Version 1.0, May 01: <i>Medium Shelter System.</i>
Equipment/Tools Required:	<ol style="list-style-type: none">1. Gloves.2. Steel toed boots.3. Eye protection.4. Jackhammer.5. Hearing protection.6. Medium Shelter System.
Learning Objective:	Individual should have an understanding of how a Medium Shelter System is erected, disassembled, and stored.
Samples of Behavior:	As part of a crew, the trainee will be able to erect, disassemble, and store a Medium Shelter System.
Notes:	
Any safety violation will result in a failure.	

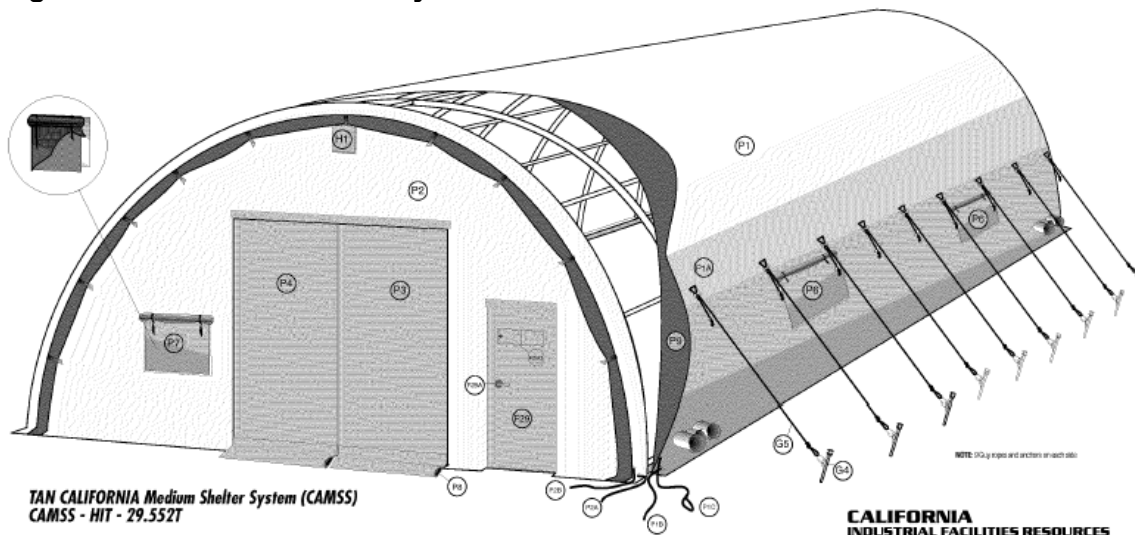
Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

MEDIUM SHELTER SYSTEM

1. Background. The Medium Shelter System (MSS) has been introduced into the Harvest Falcon and Eagle beddown packages to replace the General Purpose Shelters (GPS). As with any new system, it will take time before it is fully implemented into the inventory. With today's increasing deployments, it is very possible that Structural personnel will encounter a MSS at a deployed location. For that reason, technicians should become familiar with the erection, disassembly, and storage of the MSS.

2. Manpower Requirements. Unlike the GPS, the MSS is not labor nor manpower intensive. Only six experienced people are needed to actually erect the MSS in 4 to 6 hours. Although more are desired, it is not necessary. The GPS on the other hand, requires up to 12 people and 18 hours to set up. With the time and labor saving, two 6-man teams can set up six MSS in the same time it takes to set up one GPS.

Figure 2-6. Medium Shelter System.



3. Features. There are some common features between the GPS and MSS. Both can be used with environmental control units, and both have electrical capabilities, and both are large enough to house work centers. A GPS floor has to be constructed to fit inside the frame, whereas the MSS can be located directly on a concrete or asphalt pad. To accomplish this, it is recommended to have a rotary hammer drill available as the MSS comes with anchors.

4. Complete the CD-ROM AFQTP 3E3X1 Structure, Version 1.0, May 01: *Medium Shelter System* for detailed instruction on the erecting, disassembling, and storage of a MSS. After completing the CD-ROM AFQTP see your Unit Education and Training Manager (UETM) and take CerTest # 8166, *Medium Shelter System (MSS): Structures Support*. Trainee must score at least 80% to meet the minimum completion requirements for diamond tasks.

NOTE:

The review questions for this material are in the above-mentioned CD-ROM.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

PERFORM THE FOLLOWING FOR HANDS-ON CERTIFICATION TRAINING IF SHELTER IS AVAILABLE.

NOTE TO TRAINER/CERTIFIER:

Due to the availability of the MSS, actual hands-on proficiency will only be accomplished at certain overseas location or at a Silver Flag Training site. In addition to the availability, the size of a MSS, and number of personnel required to safely construct a shelter, the trainee will satisfy the performance portion of this AFQTP if he/she can direct five assistants to correctly erect, disassemble, and store a MSS.

5. Procedures. Follow these steps to erect, disassemble, and store a MSS:

5.1. Erect MSS.

Step 1: Locate TO 35E5-6-21, *California Medium Shelter System, Operation and Maintenance Instructions* and erect MSS in accordance with (IAW) Chapter 3, Paragraph 3-1 through 3-9.

SAFETY:

ARCHES WILL BE UNDER EXTREME SPRING PRESSURE. DO NOT PUSH ARCH LEG INTO PLACE, AS SERIOUS INJURY WILL RESULT. PULL ARCHES INTO PLACE FROM INSIDE THE TENT.

5.2. Disassembly MSS.

Step 1: Locate TO 35E5-6-21, *California Medium Shelter System, Operation and Maintenance Instructions* and disassemble MSS IAW with Chapter 4, Paragraph 4-1 through 4-4.

5.3. Store MSS.

Step 1: Locate TO 35E5-6-21, *California Medium Shelter System, Operations and Maintenance Instructions* and store MSS IAW with Chapter 4, Paragraph 4-5.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

MEDIUM SHELTER SYSTEM

PERFORMANCE CHECKLIST

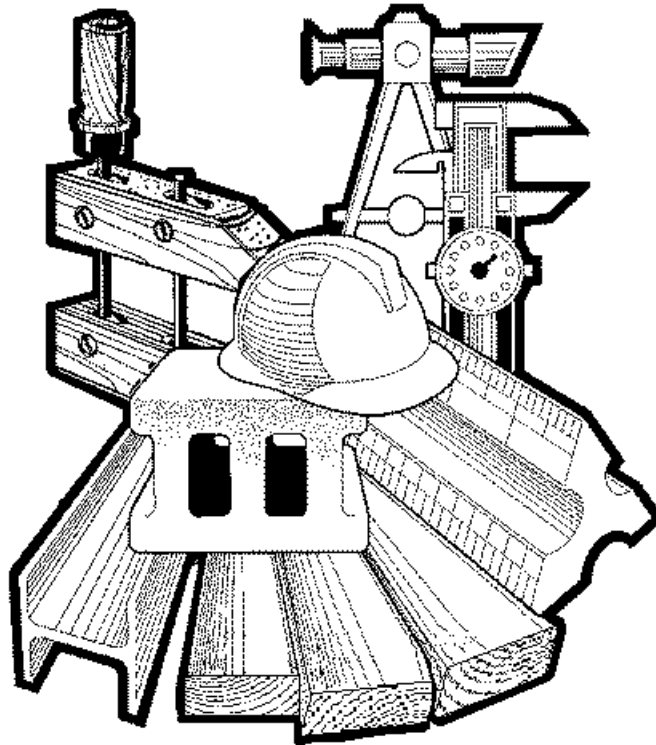
INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE ...	YES	NO
Erect Medium Shelter System		
1. describe the characteristics of a good site location?		
2. identify various parts of the set and their function?		
3. correctly layout the base and square it?		
4. correctly assemble the arches?		
5. install the arches correctly?		
6. install the end wall with door correctly?		
7. install the cover correctly?		
8. install the liner correctly?		
9. stake the guy ropes correctly?		
10. comply with all safety requirements?		
Disassemble Medium Shelter System		
1. remove the liner correctly?		
2. remove the cover safely?		
3. remove the end wall and doors safely and correctly?		
4. remove the purlins correctly?		
5. remove the arches safely?		
6. use spike puller and dunnage to remove spikes?		
7. fold items correctly?		
8. comply with all safety requirements?		
Store Medium Shelter System		
1. place purlins, red coded start purlins between forklift pockets and other small tools, cables etc on bottom?		
2. leave 6" clearance at both ends of container?		
3. place base parts upside down crosswise over purlins and place red start purlins and vehicle door uprights forming in level surface?		
4. place extension ladder on its side along edge of container?		
5. place arches into container in an alternating pattern by level finishing with top two rows that have 4 red purlins next to ladder?		
6. place step ladder on its side on top of arches next to extension ladder?		
7. place vehicle door frame on top of arches?		
8. place all fabric, except liners, into center of vehicle door frames?		
9. place light cords to one side of vehicle door frame with spares and repair bag?		
10. place spike, rope, tool and fastener bags, door handles etc. around vehicle door frame?		
11. place personnel doors on top of vehicle door frame?		
12. place liner panels on top of personnel doors?		
13. close and secure lid?		
14. comply with all safety requirements?		

FEEDBACK: Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer/certifier.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.



AIRCRAFT REVETMENT

ASSEMBLE KIT-TYPE REVETMENTS

MODULE 39

AFQTP UNIT 5

B-1 (39.5.1.1.)

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

ASSEMBLE B-1 REVETMENT KIT

Task Training Guide

STS Reference Number/Title:	39.5.1.1. – Assemble B-1 revetment kit.
Training References:	<ol style="list-style-type: none"> 1. Career Development Course (CDC) Structural Journeyman 3E351C, Volume 4, Unit 2, Section 2-3, Lesson 613; <i>Revetment Types and Installation</i>. 2. Technical Order (TO) 35E4-170-2, Aircraft Revetment Kit, Type B-1. 3. CD-ROM Air Force Qualification Training Package (AFQTP) 3E3X1 Structural, Version 2.0, Mar 02: <i>Revetments</i>. 4. Video PIN # 613388: <i>Revetments</i>.
Prerequisites:	<ol style="list-style-type: none"> 1. Possess as a minimum a 3E331 AFSC. 2. Review the following references: <ol style="list-style-type: none"> 2.1. CDC Structural Journeyman 3E351C, Volume 4, Unit 2, Section 2-3, Lesson 613. 2.2. Video PIN # 613388. 2.3. TO 35E4-170-2. 3. Complete CD-ROM AFQTP 3E3X1 Structural, Version 2.0, Mar 02: <i>Revetments</i>.
Equipment/Tools Required:	<ol style="list-style-type: none"> 1. TO 35E4-170-2. 2. B-1 Revetment Training Kit. 3. Ball Peen hammers. 4. Vice grips. 5. Flaring tool. 6. Pin alignment tool. 7. Hearing protection. 8. Eye protection. 9. Leather gloves.
Learning Objective:	Trainee should be able to erect a typical B-1 revetment kit.
Samples of Behavior:	Trainee will be able to erect a B-1 steel revetment using a kit.
Notes:	
Any safety violation is an automatic failure.	

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

ASSEMBLE B-1 REVETMENT KIT

1. Background. As Civil Engineers, we are responsible for the operability of all base facilities during peacetime as well as during war. All physical measures available must be utilized to ensure these facilities *remain* usable. Many bases, to include bare bases, do not have enough hardened facilities to protect high priority assets from bomb blast and fragments. Hardening provides a relatively inexpensive method to improve survivability and reduce the destructive effects of conventional weapon systems.

2. Types of Revetments. CE will be called upon to build revetments to protect aircraft, POL areas, command centers, etc. Primary revetment materials are soil/soil cement, concrete, timber, steel, and plastic armor. Revetments can be used to protect personnel or equipment, and be used for fighting positions. Some restrictions could hamper the type of revetment to be erected. These could include time, material availability, manpower, location, and weather. Hardening may be long-term such as reinforced concrete, or expedient such as a rapidly constructed sandbag structure.

3. Complete the CD-ROM AFQTP 3E3X1 Structural, Version 2.0, Mar 02: *Revetments for detailed instruction on assembling B-1 revetments*. After completing the CD-ROM AFQTP see your Unit Education and Training Manager to take the mandatory CerTest # 8171, *Revetment*. Trainee must score at least 80% to meet the minimum completion requirements for diamond tasks.

NOTE:

The review questions for this material are in the above-mentioned CD-ROM.

PERFORM THE FOLLOWING FOR HANDS-ON CERTIFICATION TRAINING IF REVETMENT IS AVAILABLE.

NOTE TO TRAINER/CERTIFIER:

Due to availability of revetment kits, actual hands on proficiency will only be accomplished at certain overseas location or at a Silver Flag Training site.

As a minimum for certification, the trainee must be able to identify the steps necessary for construction of the B-1 revetments.

4. Procedures. Follow this step to a assemble B-1 revetment:

Step 1: Locate TO 35E4-170-2, *Aircraft Revetment Kit, Type B-1* and assemble revetment in accordance with Section IV, Paragraph 4-1 through 4-3.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

ASSEMBLE B-1 REVETMENT KIT

PERFORMANCE CHECKLIST

INSTRUCTIONS:

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

DID THE TRAINEE....	YES	NO
1. explain what revetments are used for?		
2. explain what size panels to use for the base course?		
3. explain how to flare the ends of the cross panel before assembly?		
4. explain what material to use to fill the B-1 revetment?		
5. explain why you fill the base course before adding courses on top of first course?		
6. explain what material to use to cap the revetment?		
7. comply with all safety requirements?		

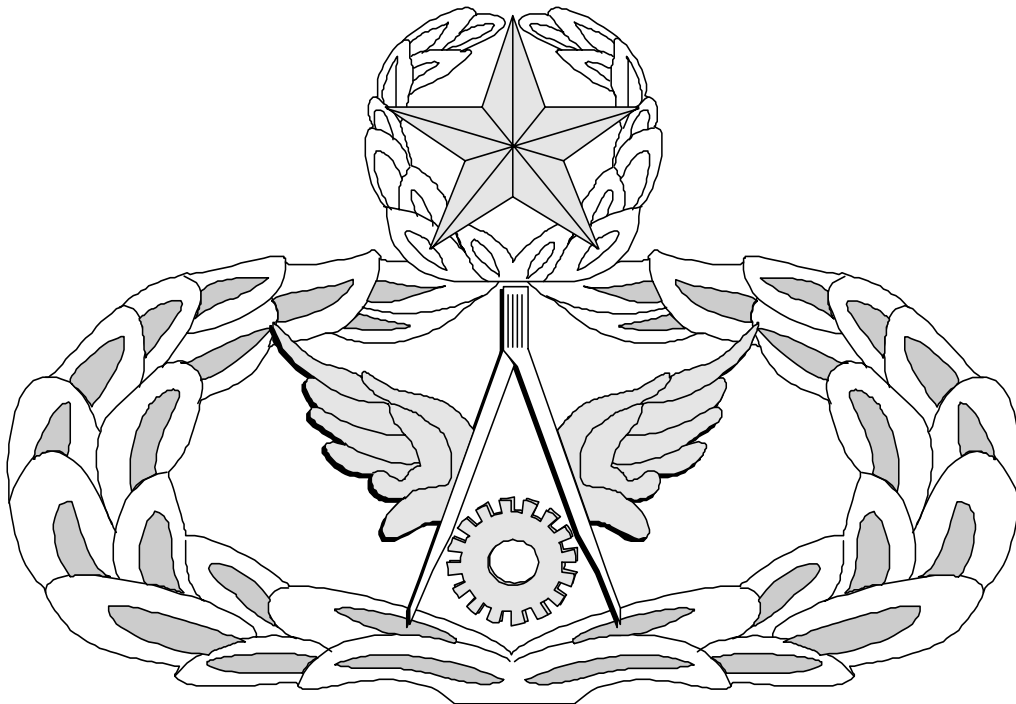
FEEDBACK: Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer/certifier.

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

Air Force Civil Engineer

QUALIFICATION TRAINING PACKAGE (QTP)

REVIEW ANSWER KEY



FOR
STRUCTURAL
(3E3X1)

MODULE 39

AFSC SPECIFIC CONTINGENCY RESPONSIBILITIES

Notice. This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

Key-1

QUICK FIX TECHNIQUES IN ROOF REPAIRS
(3E3X1-39.1.1.4.1.)

QUESTION	ANSWER
1. A sheet of $\frac{3}{4}$ " plywood should cover a hole from _____.	c. 3" to 3' in diameter.
2. How long should expedient repairs last?	c. Until permanent repairs can be made.
3. What is the most important step before doing any roof repair?	d. All the above.
4. The only consideration when making expedient repairs is getting the job done?	b. False.

QUICK FIX TECHNIQUES IN EXTERIOR WALLS REPAIRS
(3E3X1-39.1.1.4.2.)

QUESTION	ANSWER
1. The best material to use to repair a small diameter hole in a wall would be _____.	c. spray foam.
1. Trees cannot be used for shoring and bracing?	b. False
3. If a building is damaged so severely, what should you do?	c. Barricade the building to prevent entry.

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LAYOUT & INSTALL FLOOR AND RAFTERS AND LAYOUT & ERECT WALLS FOR HARDBACK TENT

(3E3X1-39.2.1.1.; 39.2.1.2.; 39.2.1.3.)

QUESTION	ANSWER
1. A hardback tent is commonly used on deployments over _____ days?	d. extended period of time
2. What are the overall dimensions of the hardback floor?	a. 15' – 6" x 31' – 6".
3. What is the common spacing between floor joists?	b. 2' on center.
4. What is used for floor sheathing on a hardback tent?	a. Plywood.
5. The second floor joist is placed how far from the end?	b. 1' – 10 ½".
6. What is the common stud spacing after the first stud?	d. 4' on center.
7. What are the walls of the hardback constructed of?	b. 2" x 4"s.
8. What is the placement of the first stud from each end of the sidewalls?	c. c. 3' 9".
9. How wide is the door opening?	a. 2' 6".
10. How thick is the plywood skirting?	b. ½".
11. What is the slope of a common rafter?	a. 7:12 slope.
12. What is the slope of a hip rafter?	b. 7:17 slope.
13. What is the slope of an end rafter?	c. 4:12 slope.
14. What is the slope of a jack rafter?	a. 7:12 slope.
15. Which rafters have compound miter cuts?	b. jack rafter and hip rafter.

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MEMORANDUM FOR HQ AFCESA/CEOF
139 Barnes Drive Suite 1
Tyndall AFB, FL 32403-5319

FROM:

SUBJECT: Qualification Training Package Improvement

1. Identify module.

Module # and title _____

2. Identify improvement/correction section(s):

<input type="checkbox"/> STS Task Reference	<input type="checkbox"/> Performance Checklist
<input type="checkbox"/> Training Reference	<input type="checkbox"/> Feedback
<input type="checkbox"/> Evaluation Instructions	<input type="checkbox"/> Format
<input type="checkbox"/> Performance Resources	<input type="checkbox"/> Other
<input type="checkbox"/> Steps in Task Performance	

3. Recommended changes--use a continuation sheet if necessary.

4. You may choose to call in your recommendations to DSN 523-6445 or FAX DSN/Commercial 523-6488 or (850) 283-6488 or email ceof.helpdesk@tyndall.af.mil.

5. Thank you for your time and interest.

YOUR NAME, RANK, USAF
Title/Position